

REMARKS

Claims 1 through 15 are pending in the Application. Claims 2, 9 and 13 have been amended. Care have been exercised to avoid the introduction of new matter. Indeed, the amendments to claims 2 and 13 merely correct manifest typographical oversights. Claim 9 has been placed in independent form. Applicant submits that the present Amendment does not generate any new matter issue.

Claims 1, 2, 4 through 8 and 10 through 15 were rejected under 35 U.S.C. §103 for obviousness predicated upon Van Ngo et al. in view of Delfino.

In the statement of the rejection, in the Examiner admitted that Van Ngo et al. are silent as to the use of laser thermal annealing the deposited silicon nitride capping layer to increase its density. The obvious fact could be stated – the method disclosed by Van Ngo et al. already results in an increased density of the silicon nitride layer and, hence, there is no need to increase the density any further. Nevertheless, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the methodology of Van Ngo et al. by laser thermal annealing the already densified silicon nitride layer for the purpose of further increasing its density. This rejection is traversed.

There is no motivation.

In order to establish the requisite motivation, the Examiner must point to a **source** in the applied prior art for **each** claim limitation and a **source** in the applied prior art for the requisite **motivational** element. *Smiths Industries Medical System v. Vital Signs Inc.*, 183 F.3d 1347, 51 USPQ2D 1415 (Fed. Cir. 1999). More to the point, the Examiner is required to make a “thorough and searching” factual inquiry and, based upon that factual inquiry and,

based upon that factual inquiry, explain **why** one having ordinary skill in the art would have been realistically impelled to modify particular prior art, in this case the **particular** method disclosed by Van Ngo et al., to arrive at the claimed invention. *In re Lee*, 237F.3d 1338, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Such a factual inquiry requires **clear and particular** factual findings as to a specific understanding or specific technological principle which would have **realistically** impelled one having ordinary skill in the art to modify the particular method disclosed by Van Ngo et al. to arrive at the claimed invention. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Merely identifying wherein features of a claimed invention are perceived to reside in disparate references does not establish the requisite motivation. *In re Kotzab, supra*; *Grain Processing Corp. v. American-Maize Products Co.*, 840 F.2d 902, 5 USPQ2d 1788 (Fed. Cir. 1988). Rather, a **specific reason** must be offered based upon **facts** to support the asserted motivation –not generalizations. *Ecolochem Inc. v. Southern California Edison, Co. supra*; *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

In applying the above legal tenets to the exigencies of this case, Applicant submits that the requisite motivation element has **not** been established. Specifically, the Examiner asserts one having ordinary skill in the art would have been motivated to modify the methodology of Van Ngo et al. by laser thermal annealing the silicon nitride layer to increase its density. But the Examiner ignores the fact that the methodology disclosed by Van Ngo et al. is designed to increase the density of the silicon nitride capping layer. In this

respect, Van Ngo et al. purposely deposit the silicon nitride capping layer at **elevated temperatures by high density plasma deposition in order to achieve a high density**, for example, 2.67 to about 2.77 g/cm³ (column 5, line 18 and column 7, line 6). Since Van Ngo et al. achieved a high density silicon nitride film, there is **no apparent reason** for one having ordinary skill in the art to have resorted to the technique disclosed by Delfino and expose the silicon nitride film to a laser light beam. In this respect, Applicant stresses that one having ordinary skill in the art must be presumed to follow conventional wisdom-he is not an inventor given to tinkering with the status quo. *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000).

Moreover, as Delfino discloses laser thermal annealing can **cause melting** of the silicon nitride layer and, indeed, this is one of the purposes for the laser treatment disclosed by Delfino. It would appear unrealistic to conclude that one having ordinary skill in the art would have applied a laser light beam to the deposited **high density** silicon nitride film formed by Van Ngo et al. with a reasonable expectation of achieving any particular useful benefit. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As held by the Court of Appeals for the Federal Circuit in *Teleflex Inc. v. Ficosa North America Corp.*, 299 F.3d 1313, 63 USPQ2d 1374, 1387 (Fed. Cir. 2002):

The showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence.

In the present situation the Examiner has **not** provided a factual basis upon which to conclude that one having ordinary skill in the art would have been realistically impelled to **even attempt to densify** the particular silicon nitride capping layer formed by Van Ngo et al. by laser thermal annealing, or by any other means for that matter, since it is already densified.

Applicant would separately argue the patentability of **claim 5** which requires laser thermal annealing the **deposited** silicon nitride capping layer to increase its density, as also specified in **claim 11**, the separate patentability which is also advocated. The Examiner has not established that the methodology of Delfino et al. is even capable of increasing density of the already **densified** silicon nitride layer **deposited** by Van Ngo et al.

Applicant further separately argues the patentability of **claims 6 and 12** which require an increase in of about 5 percent to about 8 percent in the density by laser thermal annealing. Again, the Examiner has not established that the methodology of Delfino is even capable of increasing the density of the already densified silicon nitride capping layer deposited by Van Ngo, et al. much less by 5 to 8 percent.

Applicant strenuously separately argues the patentability of **claims 7 and 9** which specify that laser thermal annealing increases the density to a second density of about 2.67 to about 2.77 g/cm³. Indeed, in this respect the silicon nitride capping layer deposited by Van Ngo et al. **already has that density**. Accordingly, there is absolutely no basis upon which to conclude that the methodology of Delfino et al. would increase the density of the silicon nitride layer deposited by Van Ngo et al. to the density recited in claims 7 and 13, since the silicon nitride layer deposited by Van Ngo et al. already has that density.

Based upon the foregoing Applicant submits that a *prima facie* basis to deny patentability to the claimed invention has not been establish for lack of the requisite motivation. Applicant, therefore, submits that the imposed rejection of claims 1, 2, 4 through 8 and 10 through 15 under 35 U.S.C. §103 for obviousness predicated upon Van Ngo et al. in view of Delfino is not factually or legally viable and, hence, solicit withdrawal thereof.

Applicant acknowledges, with appreciation, the Examiner's indication that claims 3 and 9 contain allowable subject matter. Claim 9 has been placed in independent form. Based upon the arguments submitted *supra.*, Applicant submits that the imposed rejection under 35 U.S.C. §103 has been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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